

WHAT IS CLAIMED IS:

1. A method for producing a plurality of dendritic cell/tumor cell hybrids which induce an anti-tumor response when applied to a patient causing a reduction of the number of tumor cells in said patient ,
said method comprising:
 - (a) providing a sample of a tumor against which said response is needed,
 - (b) preparing a primary cell culture comprising tumor cells derived from said tumor sample,
 - (c) providing autologous or HLA-compatible allogeneic dendritic cells, and,
 - (d) fusing said dendritic cells with said tumor cells to produce a plurality of hybrids.
2. The method of claim 1 wherein the dendritic cells of step (c) are produced by culturing precursors in the presence of cytokines.
3. The method of claim 1 wherein the dendritic cells of step (c) are members of an immortal cell line.
4. The method of claim 1 wherein the dendritic cell of step (c) is derived from bone marrow.
5. The method of claim 1 wherein the dendritic cell of step (c) is of myeloid origin.
6. The method of claim 1 wherein the dendritic cell of step (c) is of lymphoid origin.
7. The method of claim 1 wherein the dendritic cell of step (c) is an isolated dendritic cell.
8. The method of claim 1 wherein the dendritic cell of step (c) is a dendritic cell progenitor.
9. The method of claim 1 wherein the fusion in step (d) is carried out using PEG.

10. A method for producing a dendritic cell/tumor cell hybridoma which induces an anti-tumor response when applied to a patient causing a reduction of the number of tumor cells in said patient,
said method comprising:
- (a) providing a sample of a tumor against which said response is needed,
 - (b) preparing a primary culture of said tumor sample to provide tumor cells,
 - (c) deriving an immortal cell line from said tumor cells to produce immortal tumor cells,
 - (d) providing autologous or HLA-compatible or allogeneic dendritic cells,
 - (e) fusing said dendritic cells with said immortal tumor cells to produce a plurality of hybridomas,
- selecting from said plurality of hybridomas a hybridoma which exhibits at least one characteristic selected from the group consisting of dendritic cell morphology, dendritic-like cell or dendritic cell surface markers, dendritic cell genetic markers and immune cell activation *in vitro*.
11. The method of claim 10 further comprising selecting from said plurality of hybridomas, a hybridoma which expresses at least one tumor-associated antigen in common between the immortal tumor cells and the tumor against which an immune response is needed.
12. The method of claim 10 wherein the dendritic cells of step (d) are produced by culturing precursors in the presence of cytokines.
13. The method of claim 10 wherein the immortal tumor cells of step (c) are drug-sensitive, said method further comprising, after step (e), killing unfused drug-sensitive immortal tumor cells by exposure to said drug.
14. The method of claim 13 wherein said drug is hypoxanthine-aminopterin-thymidine (HAT).
15. The method of claim 10 wherein the dendritic cell of step (d) is derived from bone marrow.
16. The method of claim 10 wherein the dendritic cell of step (d) is of myeloid origin.

17. The method of claim 10 wherein the dendritic cell of step (d) is of lymphoid origin.
18. The method of claim 10 wherein the dendritic cell of step (d) is an isolated dendritic cell.
19. The method of claim 10 wherein the dendritic cell of step (d) is a dendritic cell progenitor.
20. The method of claim 10 wherein the fusion in step (e) is carried out using PEG.
21. A method for producing a dendritic cell/tumor cell hybridoma useful for the induction of an anti-tumor response when applied to a patient causing the reduction of the number of tumor cells in said patient, said method comprising:
 - (a) providing a sample of a tumor against which said response is needed,
 - (b) preparing a primary cell culture comprising tumor cells derived from said tumor sample,
 - (c) providing an immortal cell line comprising immortal autologous or HLA-compatible or allogeneic dendritic cells,
 - (d) fusing said immortal dendritic cells with said tumor cells to produce a plurality of hybridomas, and
 - (e) selecting from said plurality of hybridomas, a hybridoma which exhibits at least one characteristic selected from the group consisting of tumor cell morphology, tumor cell surface markers, tumor cell chromosomal and genetic markers.
22. The method of claim 21 further comprising selecting from said plurality of hybridomas, a hybridoma which exhibits at least one characteristic selected from the group consisting of dendritic cell morphology, dendritic cell surface markers, dendritic cell genetic markers and immune cell activation in vitro.
23. The method of claim 21 wherein the dendritic cells of step (c) are drug sensitive, said method further comprising, after step (d), killing unfused drug-sensitive immortal dendritic cells by exposure to said drug.
24. The method according to claim 23 wherein said drug is hypoxanthine-aminopterin-thymidine (HAT).

25. The method of claim 21 wherein the dendritic cell of step (c) is derived from bone marrow.
26. The method of claim 21 wherein the dendritic cell of step (c) is of myeloid origin.
27. The method of claim 21 wherein the dendritic cell of step (c) is of lymphoid origin.
28. The method of claim 21 wherein the dendritic cell of step (c) is an isolated dendritic cell.
29. The method of claim 21 wherein the dendritic cell of step (c) is a dendritic cell progenitor.
30. The method of claim 21 wherein the fusion in step (d) is carried out using PEG.
31. A method for producing a dendritic cell/tumor cell hybridoma useful for the induction of an anti-tumor response, said method comprising:
- (a) providing a sample of a tumor against which said response is needed,
 - (b) analyzing tumor-associated antigens of said tumor sample,
 - (c) providing an established cell line comprising immortal human tumor cells having at least one tumor-associated antigen in common with said tumor sample,
 - (d) providing autologous or HLA-compatible or allogeneic dendritic cells,
 - (e) fusing said dendritic cells with said immortal tumor cells to produce a plurality of hybridomas, and
 - (f) selecting from said plurality of hybridomas, a hybridoma which exhibits at least one characteristic selected from the group consisting of dendritic cell morphology, dendritic cell surface markers, dendritic cell genetic markers and immune cell activation in vitro.
32. The method of claim 31 further comprising selecting from said plurality of hybridomas, a hybridoma which expresses at least one tumor-associated antigen in common between the immortal tumor cells and the tumor against which an immune response is needed.

33. The method of claim 31, wherein the dendritic cells of step (d) are produced by culturing in the presence of cytokines.
34. The method of claim 31, wherein said tumor cells of step (c) are drug sensitive, said method comprising, after step (e), killing unfused drug-sensitive immortal tumor cells by exposure to said drug.
35. The method according to claim 34 wherein said drug is hypoxanthine-aminopterin-thymidine (HAT).
36. The method of claim 31 wherein the dendritic cell of step (d) is derived from bone marrow.
37. The method of claim 31 wherein the dendritic cell of step (d) is of myeloid origin.
38. The method of claim 31 wherein the dendritic cell of step (d) is of lymphoid origin.
39. The method of claim 31 wherein the dendritic cell of step (d) is an isolated dendritic cell.
40. The method of claim 31 wherein the dendritic cell of step (d) is a dendritic cell progenitor.
41. The method of claim 31 wherein the fusion in step (e) is carried out using PEG.
42. A method of claim 1 wherein the obtained hybrid is further induced to express the dendritic cell characteristics.
43. A method of claim 10 wherein the obtained hybridoma is further induced to express the dendritic cell characteristics.
44. A method of claim 21 wherein the obtained hybridoma is further induced to express the dendritic cell characteristics.
45. A method of claim 31 wherein the obtained hybridoma is further induced to express the dendritic cell characteristics.

46. A method of claim 42 wherein said induction is performed using GM-CSF, IFN- γ , TNF- α or a combination thereof.
47. A method of claim 43 wherein said induction is performed using GM-CSF IFN- γ , TNF- α or a combination thereof.
48. A method of claim 44 wherein said induction is performed using GM-CSF IFN- γ , TNF- α or a combination thereof.
49. A method of claim 45 wherein said induction is performed using GM-CSF IFN- γ , TNF- α or a combination thereof.
50. A method of claim 1 wherein the obtained hybrid is treated to prevent further proliferation before using it for the induction of an anti-tumor response.
51. A method of claim 10 wherein the obtained hybridoma is treated to prevent further proliferation before using it for the induction of an anti-tumor response.
52. A method of claim 21 wherein the obtained hybridoma is treated to prevent further proliferation before using it for the induction of an anti-tumor response.
53. A method of claim 31 wherein the obtained hybridoma is treated to prevent further proliferation before using it for the induction of an anti-tumor response.
54. A method of claim 50 wherein said treatment occurs by irradiation.
55. A method of claim 51 wherein said treatment occurs by irradiation.
56. A method of claim 52 wherein said treatment occurs by irradiation.
57. A method of claim 53 wherein said treatment occurs by irradiation.